Exhibit 21

Trials@uspto.gov
571-272-7822

Paper 52
Entered: January 11, 2023

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner,

v.

NEONODE SMARTPHONE LLC,
Patent Owner.

IPR2021-01041
Patent 8,095,879 B2

Before KARA L. SZPONDOWSKI, CHRISTOPHER L. OGDEN, and SCOTT B. HOWARD, *Administrative Patent Judges*.

OGDEN, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining No Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

Petitioner Google LLC ("Google") filed a Petition (Paper 6, "Pet.") for *inter partes* review of claims 1–7, 9, 12, 13, and 15–17 of U.S. Patent No. 8,095,879 B2 (Ex. 1001, "the '879 patent"). Based on the Petition and preliminary filings, the Board instituted trial. (Paper 19). Patent Owner Neonode Smartphone LLC ("Neonode") then filed a Patent Owner Response under seal (Paper 29, "PO Resp."; public redacted version as Ex. 2060), Google filed a Reply to the Patent Owner Response (Paper 35, "Pet. Reply"), and Neonode filed a Sur-reply (Paper 44, "PO Sur-reply").

We held an oral hearing on October 17, 2022, and the transcript is entered on the record. Paper 50 ("Tr.").

This is a final written decision under 35 U.S.C. § 318(a) as to whether the claims challenged in the *inter partes* review are unpatentable. For the reasons below, we conclude that Google has not shown that any claims of the '879 patent are unpatentable.

II. BACKGROUND

A. Related Proceedings

The parties identify the following as related matters: *Neonode Smartphone LLC v. Apple Inc.*, No. 6:20-cv-00505 (W.D. Tex. filed June 8, 2020); and *Neonode Smartphone LLC v. Samsung Electronics Co.*, No. 6:20-cv-00507 (W.D. Tex. filed June 8, 2020). Pet. 106; Paper 3, 2.

The Board has issued a previous final written decision addressing the '879 patent. *See Samsung Electronics Co. v. Neonode Smartphone LLC*, IPR2021-00144, Paper 59 (PTAB Dec. 15, 2022); Pet. 106, Paper 3, 2.

B. THE '879 PATENT (EX. 1001)

The '879 patent relates to a user interface on a mobile handheld computer device that has a touch-sensitive display screen divided into a menu area and a display area. *See* Ex. 1001, 1:6–9, code (57). The user interface is "specifically adapted to be used with a small computer unit where the size of the touch sensitive area is in the order of 2–3 inches" and the interface can "be operated by one hand." *Id.* at 3:1–6.

Figure 1 of the '879 patent, reproduced below, illustrates such a user interface:

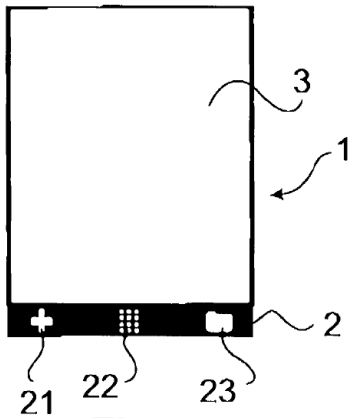

Fig. 1.

Figure 1 depicts touch-sensitive area 1 on a mobile handheld device. Ex. 1001, 3:22–23, 3:51–53. It is divided into menu area 2 and display area 3. *Id.* at 3:53–54. Menu area 2 is a narrow strip along the lower part of touch-sensitive area 1 that contains predefined functions 21 (a general application-dependent function), 22 (a keyboard), and 23 (a task and file manager). *Id.* at 4:1–6; *see also id.* at 2:7–10.

Functions 21, 22, and 23 in menu area 2 "can be activated when the touch sensitive area detects a movement of an object with its starting point within the representation of the function on the menu area and with a

direction from the menu area to the display area." Ex. 1001, 1:65–2:5, 2:11–14. This method of activation is shown in Figure 2, reproduced below:

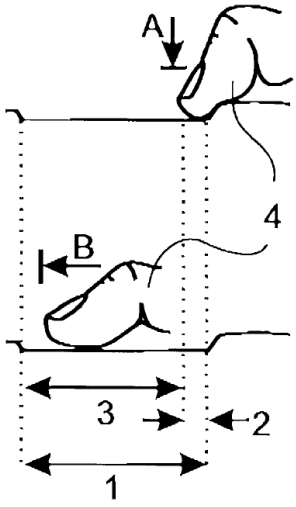

Fig. 2.

Figure 2, above, illustrates a touch gesture by which a user may activate functions 21, 22, or 23 in area 2. *See* Ex. 1001, 3:24–25. This gesture begins when object 4 (a thumb as shown in Figure 2, but it could be any finger, a pen, or another pointing device, *id.* at 6:11–15) touches the display at point A within representation 21, 22, or 23, and moves in direction B away from menu area 2 into display area 3. *Id.* at 4:7–11.

When a user activates the first function, display area 3 displays icons representing services or settings, depending on the current active application. Ex. 1001, 2:18–20. Figure 3, reproduced below, illustrates the touch screen after function 21 has been activated:

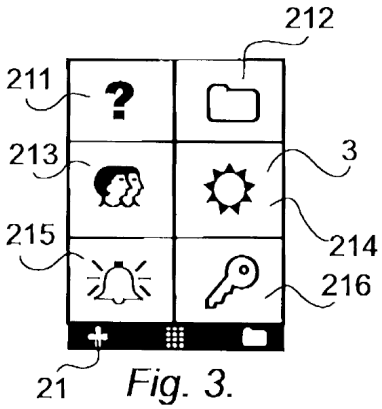

Fig. 3.

Ex. 1001, 3:26. Figure 3, above, shows that after a user activates function 21 with the gesture as illustrated in Figure 2, display area 3 displays icons 211–216, which each represent services or functions depending on the currently active application. *Id.* at 4:12–15. If, for example, the active application handles a picture, then the icons showing on display area 3 after a user activates the first function can include services such as "save to disk," "send as SMS," or "delete," or settings such as "resolution," "colour," or "brightness." *Id.* at 4:24–28.

Analogously, selecting function 22 activates a keyboard, and selecting function 23 activates a library of available applications and files on the device. Ex. 1001, 4:36–38, 4:63–65, Figs. 5–6. If there is no currently active application, the icons may "represent services or settings of the operations system of the computer unit, such as background picture, clock alarm 215, users 213, help 211, etc." *Id.* at 4:29–33.

C. Challenged Claims and Grounds

Claim 1, the only independent claim, is as follows:

> 1. A non-transitory computer readable medium storing a computer program with computer program code, which, when read by a mobile handheld computer unit, allows the computer to present a user interface for the mobile handheld computer unit, the user interface comprising:
>
> [a] a touch sensitive area in which a representation of a function is provided,
>
> [b] wherein the representation consists of only one option for activating the function and
>
> [c] wherein the function is activated by a multi-step operation comprising (i) an object touching the touch sensitive area at a location where the representation is provided and then (ii) the object gliding along the touch sensitive area away from the touched location,
>
> [d] wherein the representation of the function is not relocated or duplicated during the gliding.

Ex. 1001, 6:45–59 (Google's reference letters added).

Google argues six grounds for *inter partes* review, as shown in the following table:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–5, 13, 15–17	103(a)[1]	Robertson,[2] Maddalozzo[3]
6, 7, 9	103(a)	Robertson, Maddalozzo, Vayda[4]
12	103(a)	Robertson, Maddalozzo, Bedford-Roberts[5]
1, 4–6, 13, 15–17	103(a)	Tarpenning[6]
2, 3, 7, 9	103(a)	Tarpenning, Vayda
12	103(a)	Tarpenning, Bedford-Roberts

Pet. 1–2.

D. Declaratory Testimony

Google submits two declarations of Dr. Jacob O. Wobbrock as expert testimony. Exs. 1003, 1032; *see also* Ex. 1004 (curriculum vitae). Google also relies on a declarations of Rachel J. Watters (Ex. 1018) and Kelley M. Hayes Greenhill (Ex. 1019) as to Robertson's public availability.

Neonode submits a declaration of Dr. Craig Rosenberg. Ex. 2019; *see also* Ex. 2002 (curriculum vitae). Neonode also submits declarations of

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[1] 35 U.S.C. § 103(a) (2006), *amended by* Leahy–Smith America Invents Act, Pub. L. No. 112-29 § 103, sec. (n)(1), 125 Stat. 284, 287, 293 (2011) (effective Mar. 16, 2013). The '879 patent issued from an application filed on December 10, 2002, which is before the effective date of this amendment to section 103. *See* Ex. 1001, code (22).

[2] George G. Robertson et al., *Buttons as First Class Objects on an X Desktop*, UIST: Proceedings of the ACM Symposium on User Interface Software and Technology: Hilton Head, South Carolina, USA, 35–44 (Nov. 11–13, 1991) (Ex. 1005).

[3] Maddalozzo et al., US 7,768,501 B1, issued Aug. 3, 2010 (Ex. 1006).

[4] Vayda et al., US 5,745,717, issued Apr. 28, 1998 (Ex. 1007).

[5] Bedford-Roberts, US 5,870,092, issued Feb. 9, 1999 (Ex. 1008).

[6] Tarpenning et al., US 6,181,344 B1, issued Jan. 30, 2001 (Ex. 1009).

Joseph Shain (Ex. 2008), Ulf Mårtensson (Ex. 2054), Per Bystedt (Ex. 2055 under seal; public redacted copy as Ex. 2061), and Marcus Bäcklund (Ex. 2056) relating to alleged objective indicia of non-obviousness and the early development of touch-screen phones that, according to Neonode, embody the challenged claims.

III. GROUNDS OF THE PETITION

For the reasons below, we determine that Google has not shown, by a preponderance of the evidence, that claims 1–7, 9, 12, 13, and 15–17 of the '879 patent are unpatentable under the grounds of the Petition. Before analyzing these grounds in detail, we address two matters that will underlie our analysis: the level of ordinary skill in the art and the construction we will apply to the claim terms.

A. Level of Ordinary Skill in the Art

The level of ordinary skill in the pertinent art at the time of the invention is a factor in how we construe patent claims. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc). It is also one of the factors we consider when determining whether a patent claim would have been obvious over the prior art. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

To assess the level of ordinary skill, we construct a hypothetical "person of ordinary skill in the art," from whose vantage point we assess obviousness and claim interpretation. *See In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998). This legal construct "presumes that all prior art references

in the field of the invention are available to this hypothetical skilled artisan." *Id.* (citing *In re Carlson*, 983 F.2d 1032, 1038 (Fed. Cir. 1993)).

For Google, Dr. Wobbrock testifies that a person of ordinary skill in the art at the time of the invention, would have had "at least a bachelor's degree in Computer Science, Human-Computer Interaction, Symbolic Systems, or related engineering disciplines, and at least two years of experience designing and programming graphical user interfaces," but that "[r]elevant work experience can substitute for formal education and advanced degree studies could substitute for work experience." Ex. 1003 ¶ 49.

Testifying for Neonode, Dr. Rosenberg states that for his declaration, he "will apply the same definition of the level of skill of a [person of ordinary skill in the art]" as Dr. Wobbrock. Ex. 2019 ¶ 27.

We find Dr. Wobbrock's uncontested articulation to be reasonable in light of the subject matter involved in the '879 patent and the asserted prior art. *See, e.g.*, Ex. 1001, 1:49–61 (stating that the '879 patent addresses technical problems including "to provide a user-friendly interface . . . on a small handheld computer unit"). Thus, we adopt it for our decision.

B. Claim Construction

In an *inter partes* review, we construe a patent claim "using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b)." 37 C.F.R. § 42.100(b) (2020). This generally includes "construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent." *Id.* The ordinary

and customary meaning of a claim term "is its meaning to the ordinary artisan after reading the entire patent," and "as of the effective filing date of the patent application." *Phillips*, 415 F.3d at 1313, 1321. There are only two circumstances in which a construction departs from the ordinary and customary meaning: "1) when a patentee sets out a definition and acts as [their] own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution." *Thorner v. Sony Comput. Entm't Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012). Any such special meaning of a term "must be sufficiently clear in the specification that any departure from common usage would be so understood by a person of experience in the field of the invention." *Multiform Desiccants Inc. v. Medzam Ltd.*, 133 F.3d 1473, 1477 (Fed. Cir. 1998).

To construe the claim terms, "we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence." *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006).

Google does not propose any explicit claim constructions in its Petition. *See* Pet. 4. Neonode does not propose any explicit constructions either, but in its Response, Neonode raises a number of claim construction arguments regarding the term *gliding . . . away* as it appears in limitation 1c, to which Google responds in its Reply. *See* PO Resp. 31–50, 66–69; Pet. Reply 7–12, 19–21; *see also* PO Sur-reply 1–10, 19–21. We do not need to construe this term explicitly for our decision, and to the extent we need to interpret this or any other terms, we address the terms below in the context of the prior art. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) ("[W]e need only construe terms

'that are in controversy, and only to the extent necessary to resolve the controversy' . . . ." (quoting *Vivid Techs., Inc. v. Am. Sci & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

C. GROUNDS BASED ON ROBERTSON

In the first ground of the Petition, Google argues that claims 1–5, 13, and 15–17 are unpatentable under 35 U.S.C. § 103(a) as obvious over Robertson in view of Maddalozzo. Pet. 5–64. For this ground, we focus on Google's challenge to sole independent claim 1 and particularly limitation 1c (Pet. 25–29), after which we address the remaining claims and the remaining grounds.

A claim is unpatentable under § 103(a) for obviousness if the differences between the claimed subject matter and the prior art are "such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). When a ground in a petition is based on a combination of references, we consider "whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue." *Id.* at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

We base our obviousness inquiry on factual considerations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill in the art, and (4) any objective indicia of obviousness or non-obviousness that may be in evidence. *See Graham*, 383 U.S. at 17–18.

Considering these factors, we determine for the reasons below that Google has not shown, by a preponderance of the evidence, that claim 1 is unpatentable under 35 U.S.C. § 103(a) as obvious over Robertson in view of Maddalozzo.

1. Overview of Robertson (Ex. 1005)

Robertson describes a high-level user interface toolkit, called "XButtons," which supports on-screen buttons as first-class objects on an X Window system desktop. Ex. 1005, 35. According to Robertson, XButtons typically appear as small rectangular screen objects, usually have some text that indicates what their action is, and may include a field for editable text. *Id.* at 38. A group of XButtons is shown in Figure 1, which we reproduce below.

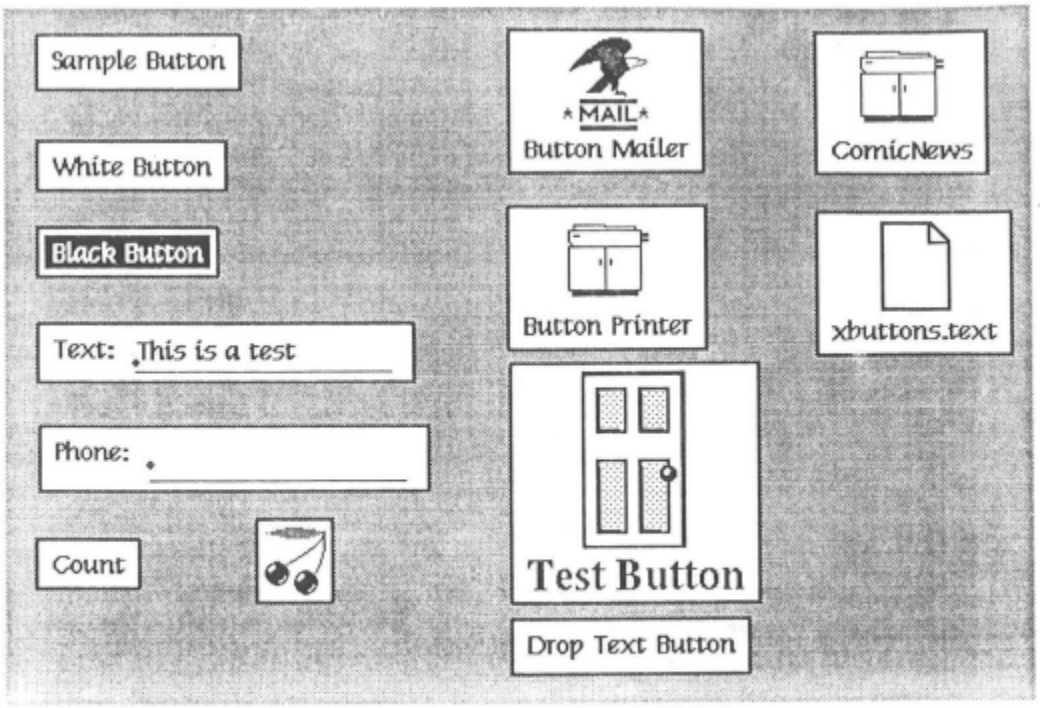


Figure 1: Sample Set of XButtons.

Figure 1, above, illustrates a sample set of XButtons including one for a "Phone" function. Ex. 1005, 38–39. XButtons can have multiple associated actions, each selected by simple mouse or pen gestures such as "flick left," "flick right," "flick up," "flick down," "click," "rubout," "check," or "insert." *Id.* at 39. For example, "[t]he 'Phone' button will let you type the name of someone, then pop up a window with their phone number (by clicking) or dial the number (with the flick right gesture)." *Id.*

"If the user is unfamiliar with the action of a particular button, a menu can be popped up to reveal which gestures are supported (and what they do)," using a particular gesture. Ex. 1005, 39. The menu associated with the "Phone" XButton is shown in Figure 2, which we reproduce below.

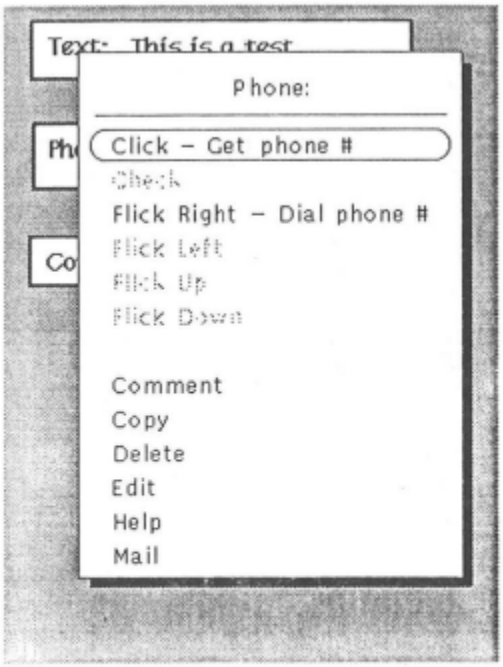


Figure 2: Sample Button Menu.

Figure 2, above, illustrates a sample menu for an XButton. Ex. 1005, 39–40. The menu shows all potential user manipulations of the XButton; for

example, it shows that the "Click" gesture is associated with "Get phone #" and the "Flick Right" gesture is associated with "Dial phone #." *Id.*

XButtons may also have associated with them a button editor, as shown in Figure 3, which we reproduce below.

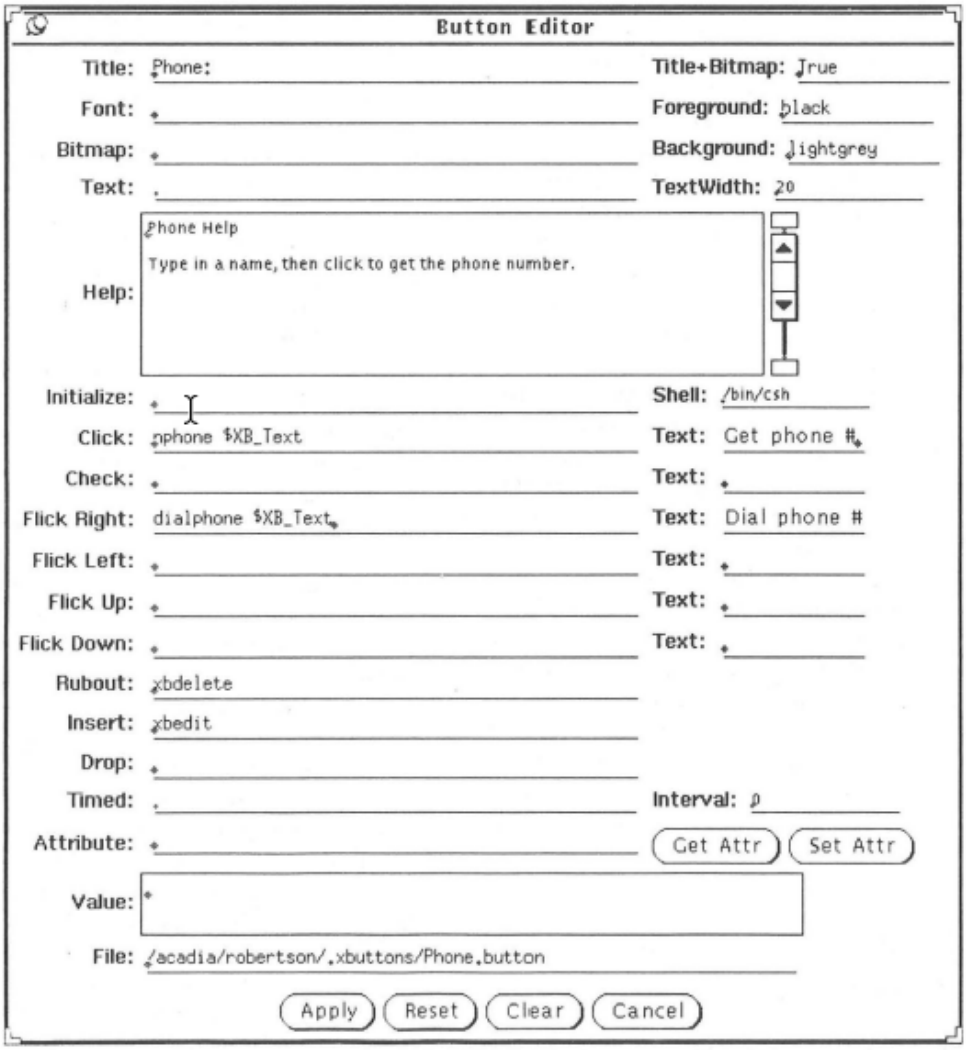


Figure 3: Structured Button Editor.

Figure 3 shows a button editor for the "Phone" XButton whose menu is shown in Figure 2. Ex. 1005, 40–41. The button editor is a structured property-sheet editor designed specifically for editing an XButton. *Id.* at 40. The editor fields at the top specify the appearance of the button. *Id.* The

middle of the editor specifies the action language, the various actions, and the text to appear in the menu for each action. *Id.* Toward the bottom of the editor are fields ("Attribute" and "Value") that allow the user to view and replace user-defined properties. *Id.*

2. Limitation 1c

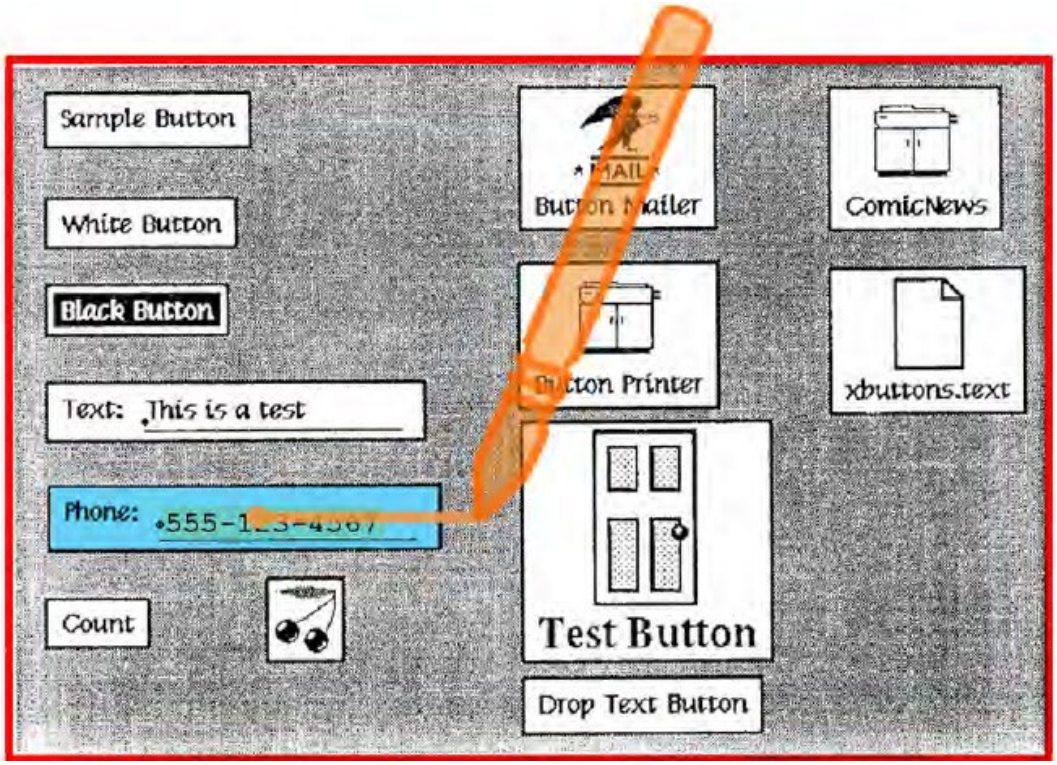
Because we find that Google has not shown that the combination of Robertson and Maddalozzo teaches or suggests limitation 1c, we need only address that limitation in our decision. Moreover, because Google relies only on Robertson for limitation 1c, we need not address Google's arguments concerning Maddalozzo. *See* Pet. 25–29 (not referring to Maddalozzo in the context of limitation 1c).[7]

Limitation 1c recites "wherein the function is activated by a multi-step operation comprising (i) an object touching the touch sensitive area at a location where the representation is provided and then (ii) the object gliding along the touch sensitive area away from the touched location." Ex. 1001, 6:52–57. An example of this operation is the gesture illustrated in Figure 2 of the '879 patent, which we discuss above. *See supra* Section II.B.

Google contends that Robertson discloses this recited multi-step operation by disclosing that a user can activate a "dialphone" function to call a phone number by "placing a pen on the phone button, then sliding the pen to the right along the touch-sensitive interface to perform a 'flick right' gesture." Pet. 25 (citing Ex. 1005, 38–39; Ex. 1003 ¶ 107). Google contends

[7] For claim 1, Google relies on Maddalozzo solely for teaching the preamble. *See* Pet. 12–19.

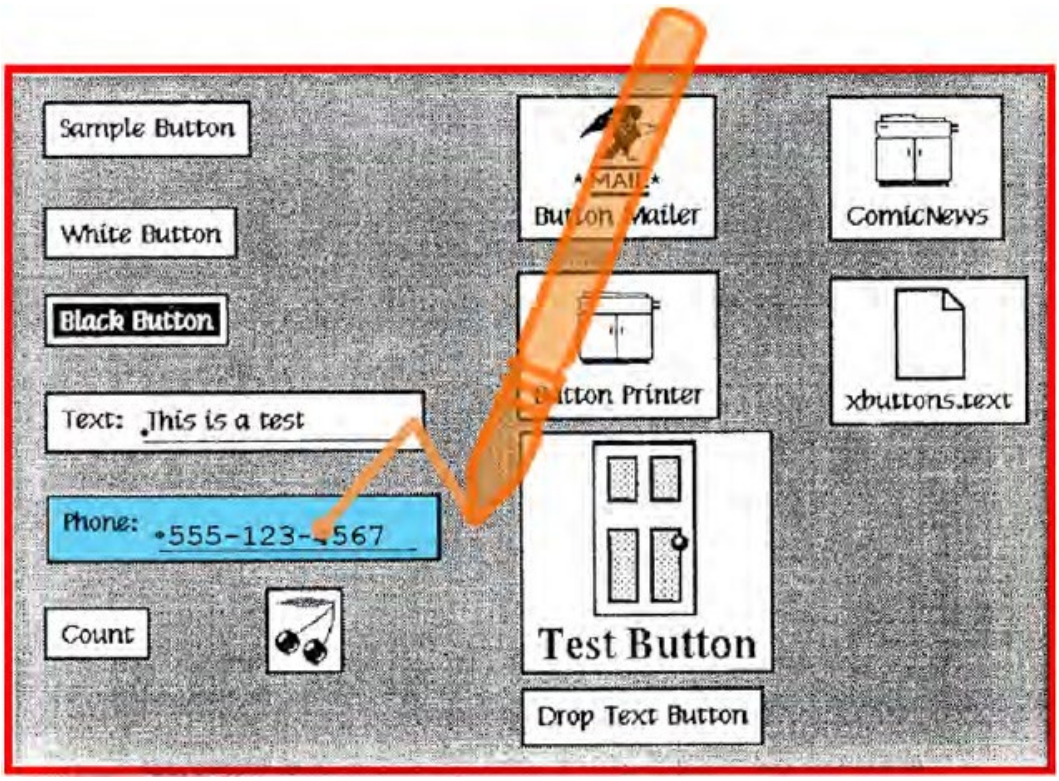
that, according to Robertson, "'gesture[s] must start in an XButton,' but 'can move outside the XButton' while performed." *Id.* (alteration in original) (quoting Ex. 1005, 43) (citing Ex. 1005, 39; Ex. 1003 ¶ 106). Thus, Google depicts this operation with an annotated version of Robertson's Figure 1, which we reproduce below:



Pet. 26. In the above figure, Google annotates Robertson's Figure 1 by highlighting the "Phone" XButton (in which has been entered a particular phone number) in blue and showing an orange pen and a path it would allegedly make starting on the phone number and ending outside the XButton. *See* Pet. 25–26.

Alternatively, Google contends that Robertson discloses activating an "xbedit" function to open the "Phone" button's button editor by "touching a pen (or finger) to the phone button, then sliding the pen away from the initial touched location in the shape of a caret to perform an 'Insert gesture.'"

Pet. 26–27 (citing Ex. 1005, 39–40; Ex. 1003 ¶ 108). Google depicts this operation with another annotated version of Robertson's Figure 1, which we reproduce below:



Pet. 27. Shown above is Robertson's Figure 1 that Google has annotated to highlight the "Phone" XButton (in which has been entered a particular phone number) in blue and showing an orange pen and a path it would allegedly make starting on the phone number, moving diagonally upward and to the right outside the XButton, and then moving diagonally downward and to the right. *See id.*

In its Response, Neonode contends that Google has failed to support its contention that Robertson's "flick-right" and "insert" gestures reflect the stylus performing an operation that comprises "gliding . . . away." *See* PO Resp. 31. First, Neonode contends that based on the prosecution history and

extrinsic evidence, the term *gliding* means more than simply any movement along the touch sensitive area. *See id.* 32–35.

In particular, Neonode notes that during prosecution of the '879 patent, the original language describing the gesture in limitation 1c was "*moving* in a direction *from* a starting point that is the representation [of a function] . . . *to* said display area." PO Resp. 33 (alterations in original) (quoting Ex. 1002, 201). Neonode argues that, after the Examiner rejected claims with the above language, "[i]n further prosecution and in explaining the gesture the Applicant sought to claim," the applicant encouraged the Examiner to watch a video (Ex. 2020) demonstrating the gesture on Neonode's N2 mobile device. *Id.* (citing Ex. 1002, 214–15). Neonode contends that this video depicts a gesture that is "similar to what today's systems refer to as a 'swipe' gesture, where, e.g., the thumb is placed on a representation of a function (menu item with an arrow) and through a swiping motion, the menu screen opens." *Id.* at 32–34 (citing Ex. 2020, time codes 00:26–00:27).

Then, according to Neonode, "[i]n the subsequent office action, the Examiner acknowledged the 'swiping' gesture of the claims, but recognized that the then drafted claims[] simply required 'moving' the object, and were thus too broad to limit the claims to a swipe/glide gesture." PO Resp. 34 (citing Ex. 1002, 258 ("[T]he Examiner feels that the limitations, as claimed, . . . are still too broad to suggest without research what was shown in the video demonstration.")). Then, Neonode argues that after an examiner interview "to properly claim the present invention," the applicant amended the claim to its current form, "*gliding* along the touch sensitive area *away* from the location." *Id.* (quoting Ex. 1002, 334; then quoting *id.* at 317–18).

Thus, Neonode contends that a person of ordinary skill in the art would have understood from the prosecution history that the word *gliding* as recited in limitation 1c carries a more specific meaning than mere movement. PO Resp. 35 (citing *Ajinomoto Co. v. ITC*, 932 F.3d 1342, 1351 (Fed. Cir. 2019)).

Next, Neonode argues that Google has failed to show that a person of ordinary skill in the art would have understood Robertson's "flick" gesture to comprise "gliding." PO Resp. 35. Neonode first points to dictionary definitions in which the word *flick* denotes a sharp or jerky motion, whereas the word *glide* denotes a smooth, continuous motion. *Id.* at 35–38 (citing Exs. 2049, 2052, 2050, 2057; Ex. 2019 ¶¶ 78–79). Neonode also points to more recent developer guidelines to show that leading smart phone developers Apple and Google have distinguished between "flick" and "swipe" gestures. *Id.* at 39–40 (citing Ex. 2022, 4; Ex. 2023, 6; Ex. 2029, 2; Ex. 2019 ¶¶ 80–81). According to Dr. Rosenberg, in Google's Android operating system, a "flick" gesture simulates a fast spinning motion, and in later Android releases, the gesture "creates a momentum effect where the scroller initially moves at a given velocity, and gradually slows down," whereas "a 'swipe' gesture is used to close an application." Ex. 2019 ¶¶ 82–83 (citing Ex. 2025, 21; Ex. 2026, 5; Ex. 2027, 8 (calling the gesture "fling"); Ex. 2028, 1).

Neonode argues that the difference between "glide" ("swipe") and "flick" gestures is analogous to the difference between "walking and running," which are distinct movements. PO Resp. 41 (citing Ex. 2019 ¶ 84). In the context of operating a touchscreen with a pen on a 1991 desktop (allegedly consistent with how the term is used today), Dr. Rosenberg

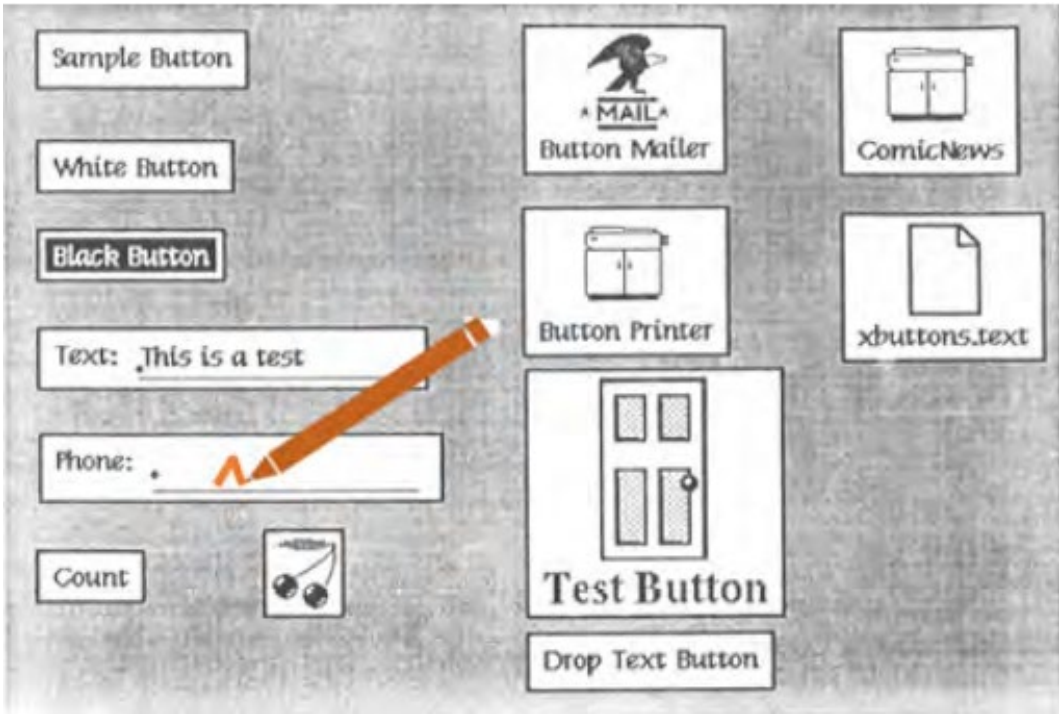
testifies that "[i]n a flick gesture, the pen would touch the screen, but only moves on the screen for a very short distance and is quickly lifted from the screen in a 'jerky' motion." Ex. 2019 ¶¶ 85–86.

Thus, Neonode disagrees with how Google depicts a "flick right" gesture in its annotated version of Robertson's Figure 1, reproduced above. PO Resp. 42. According to Neonode, neither Google nor Dr. Wobbrock have explained why the gesture would have been a several-inches-long continuous movement, as depicted, which does not reflect the plain meaning of *flick* as a "short, jerky motion." *Id.* at 42–43. Although Neonode acknowledges that Robertson's system is capable, in general, of recognizing gestures that begin within an XButton and extend outside of it, Neonode disagrees that this would necessarily be the case for the "flick right" gesture, unless the gesture began close to the edge of the XButton. *Id.* at 43–44 (citing Ex. 2019 ¶ 89).

Dr. Rosenberg also states that Robertson "discloses that a drag-and-drop operation can be performed on its XButtons," so "[i]f Robertson's 'flick' was really a glide," then if the user performed a gesture as depicted in Google's annotated version of Figure 1, "Robertson's system would not know whether the movement of a mouse/pen was a drag-and-drop operation or a glide gesture." Ex. 2019 ¶ 90 (citing Ex. 1005, 39, 40, 42). On the other hand, "a 'flick' gesture is readily recognizable due to its higher speed and shorter distance—which, as Robertson indicates, is not intended to (even if it 'can') go outside of the XButton itself." *Id.*

Neonode also disputes that a person of ordinary skill in the art would have interpreted Robertson's "insert" gesture—which Robertson describes as "like an editor's caret"—to comprise a "gliding . . . away" movement.

PO Resp. 45 (quoting Ex. 1005, 40). According to Neonode, "[a]n editor's caret—'^'—has a sharp angle and is usually smaller than the text." *Id.* at 47–48 (citing Ex. 2019 ¶ 99). According to Dr. Rosenberg, forming this gesture would involve "two jerky movements connected together," or "drawing a first sharp, short line, and then sharply changing direction and drawing a second sharp, short line." Ex. 2019 ¶ 100. Thus, Neonode disagrees with Google's depiction of two large lines that extend outside the XButton and even over neighboring XButtons. PO Resp. 49–50 (citing Ex. 2019 ¶¶ 101–102). Rather, according to Dr. Rosenberg, Robertson's "insert" gesture would more closely resemble the depiction shown in Neonode's own annotated version of Figure 1, which we reproduce below:



Ex. 2019 ¶ 102. Neonode's annotated version of Robertson's Figure 1 depicts an orange caret roughly on the same scale as the text that would appear in the "Phone" XButton, and a pen "with the correct approximate

scale of the size of the pen compared to a typical desktop of 1991." PO Resp. 49 (citing Ex. 2019 ¶¶ 101–102).

In its Reply, Google contends that we should decline to construe *gliding . . . away* as Neonode contends because doing so would render claim 1 unpatentable for lack of written description, because the original disclosure of the '879 patent only described general movements, not specifically a gliding gesture. Pet. Reply 7–8 (citing *Ruckus Wireless, Inc. v. Innovative Wireless Sols., LLC*, 824 F.3d 999, 1004 (Fed. Cir. 2016); *Novozymes A/S v. DuPont Nutrition Biosciences APS*, 723 F.3d 1336, 1346 (Fed. Cir. 2013); *D Three Enters., LLC v. SunModo Corp.*, 890 F.3d 1042, 1050–51 (Fed. Cir. 2018)).

Neonode counters in its Sur-reply that the "gliding . . . away" language in limitation 1c finds support in Figure 2 of the original disclosure leading to the '879 patent, which depicts a gliding motion and not a flick. PO Sur-reply 7–8 (citing *Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1346 (Fed. Cir. 2016)). But in any event, Neonode argues that construing terms to preserve validity is only "a last resort if the claim is 'still ambiguous' after 'applying all the available tools of claim construction.'" *Id.* at 7 (quoting *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 911 (Fed. Cir. 2004)). Neonode contends that this is not the case here, because "the prosecution history clearly and unambiguously informs a [person of ordinary skill in the art] that the claimed 'gliding . . . away' is distinct from 'moving-from-to.'" *Id.*

Next, Google contends that on cross-examination, Dr. Rosenberg could not delineate the boundary between a "flick" and a "glide," and admitted that "both flick and glide gestures start at a touched location and

move away from the touched location while continuing to touch the screen" and "that the distinction is arbitrary." Pet. Reply 8, 9–10, 11 (citing Ex. 1031, 27:15–29:6, 31:15–32:12, 34:24–35:17; Ex. 1001, 2:61–67, 5:33–35). Google also argues that "Neonode's citations to general-purpose dictionaries [or development guides] are unavailing because they are either after-arising or improperly contradict the intrinsic record, which describes only 'movement' without regard to speed or distance." *Id.* at 10 (footnote omitted) (citing *Eon Corp. IP Holdings v. Silver Spring Networks, Inc.*, 815 F.3d 1314, 1320–21 (Fed. Cir. 2016); *Profectus Tech. LLC v. Huawei Techs. Co.*, 823 F.3d 1375, 1380 (Fed. Cir. 2016); *Seabed Geosolutions (US) Inc. v. Magseis FF LLC*, 8 F.4th 1285, 1287 (Fed. Cir. 2021)).

Neonode disagrees that Dr. Rosenberg admitted that the distinction between "flick" and "glide" is arbitrary; according to Neonode, he merely testified "that 'one number' would not suffice to distinguish between a 'flick' and a 'glide' since it would depend on various factors such as screen size, resolution of the screen, [and] whether a stylus or finger is used." PO Sur-reply 3 (citing Ex. 1031, 28:16–29:6). Neonode contends that this does not make the distinction arbitrary, and that Google has been able to distinguish between "flick" and "swipe" gestures in its own documentation for the Android operating system. *Id.* (citing PO Resp. 40–41).

Neonode also contends that Google's arguments in its Reply that Robertson's "flick" falls within the scope of the recited "gliding . . . away" gesture are conclusory and untethered to any further testimony, including by Dr. Wobbrock. PO Sur-reply 1–2. And according to Neonode, while Google criticizes Neonode's dictionary definitions, Google provides none of its own. *Id.* at 2. Neonode disagrees that its dictionary evidence is irrelevant because

it is "after-arising," because Neonode provides dictionary definitions from the early 1990s as well as later definitions to show consistency over time. *Id.* (citing Exs. 2049, 2052, 2050, 2057). As to the Apple and Google development guides, Neonode acknowledges that they are from after 2002, the earliest priority date of the '879 patent, but contends that Google "presents no evidence for the insinuation that these terms were used differently in 2002." *Id.* at 3.

Next, Google contends that (1) during prosecution, the applicant "never distinguished 'gliding' from other gestures or movement generally, and in fact equated other gestures with a glide," and "[t]he examiner also continued to search 'flick as relevant after the amendment," Pet. Reply 8 (citing Ex. 1002, 381, 482, 496–497, 585); and (2) "Neonode's citation [during prosecution] to its after-arising N2 advertisement . . . is not relevant because it was used to distinguish 'the representation of the function is not relocated or duplicated during the gliding' limitation [1d], not between 'gliding' and another movement type," *id.* at 8–9 (citing Ex. 1002, 258, 611–612).

Neonode disagrees that the applicant never distinguished "gliding" from other gestures, because that is what was happening when the applicant amended the claims from the original language describing the gesture as "moving" from one point to another. PO Sur-reply 4. Neonode also disagrees that the applicant equated a "glide" with a distinct "drag" operation (or that this is relevant to the distinction between "glide" and "flick"), because in the cited passages of the prosecution history, the applicant was clearly distinguishing between what it described as its "[n]ovel touch-and-glide user interface operation" and a "conventional . . . drag-and-drop" operation in a

prior art reference. *Id.* at 4–5 (quoting Ex. 1002, 297) (citing Ex. 1002, 496–498). Neonode also contends that the applicant compared "gliding" to "swiping," "rubbing," or "sliding," but never to a "flick" or a "drag." *Id.* at 5 (citing Ex. 1002, 273 ("I would like to discuss the touch-and-glide thumb movement, variously referred to as 'swiping,' 'rubbing,' gliding' and 'sliding.'"), 390 ("One such movement is a 'rubbing'/'swiping'/'touch-and-glide' movement, whereby a finger touches a touch-sensitive screen at a location where an icon for a function is displayed, and then rubs/swipes/glides, along the touch screen away from the location without lifting the finger.")).

Neonode also disagrees that the applicant referred the Examiner to the N2 video to distinguish limitation 1d rather than 1c. PO Sur-reply 5–6. According to Neonode, "[t]he Applicant did not make any arguments regarding 'duplication or relocation' of the representation of the function in connection with the video demonstration, and this language was not added to the claim until later." *Id.* at 6.

Finally, Google contends that "Robertson discloses that the 'flick' gesture starts by touching inside a button and moving away from the touched location, as described in the '879 patent," and "does not place any boundary on the speed or duration of its gestures." Pet. Reply 10–11 (citing Ex. 1003 ¶¶ 105–110; Ex. 1005, 43 (teaching that Robertson's system can recognize gestures that extend outside an XButton)); *see also id.* at 11 (arguing that the size of a gesture is irrelevant "because neither Robertson nor the '879 patent is size-constrained").

Having considered the arguments and evidence of record, we determine that Petitioner has not met its burden to show that Robertson's

"flick" gestures comprise "gliding along the touch sensitive area away from the touched location" as recited in limitation 1c.

Because Google has the burden of persuasion, Neonode has no obligation to precisely define the term *gliding . . . away* or explain how the term differs from the term *flick* in Robertson. *See* 37 C.F.R. § 42.104(b)(3) (2020); 35 U.S.C. § 316(e). Nevertheless, we agree with Neonode that during prosecution of the '879 patent, the applicant clearly intended the claims as a whole, and particularly limitation 1c, to cover what is known today as a "swipe" gesture, particularly but not exclusively as distinguished from a prior-art drag-and-drop operation. *See* Ex. 1002, 201, 214–15, 258, 273, 297, 317–18, 334, 390, 496–97; Ex. 2020. In particular, it appears from the record that when the Examiner was considering the submitted video of Neonode's N2 phone, the main issue was how to capture the swiping gestures shown in the video while distinguishing from drag-and-drop operations known in the prior art. *See* Ex. 1002, 258. Thus, we agree with Neonode that a person of ordinary skill in the art would have interpreted the phrase *gliding . . . away* to reflect a swiping gesture that is more specific than merely an on-screen movement from one location to another.

We disagree with Google that we should factor any potential lack of written-description support into our interpretation of *gliding . . . away*. To the extent there is any ambiguity in the term,[8] it does not rise to the level that

[8] The evidence suggests that the distinction between a "flick" and a "glide" may involve a number of considerations such as the size of the screen and whether the pointing object is a finger or stylus. Ex. 1031, 27:15–29:6. This does not mean that a person of ordinary skill in the art, applying those considerations, would have been unable to distinguish between a "flick" and

"the term or terms chosen by the patentee so deprive the claim of clarity that there is no means by which the scope of the claim may be ascertained from the language used." *Johnson Worldwide Assocs., Inc. v. Zebco Corp.*, 175 F.3d 985, 990 (Fed. Cir. 1999); *see also Liebel-Flarsheim*, 358 F.3d at 911 ("[U]nless the court concludes, after applying all the available tools of claim construction, that the claim is still ambiguous, the axiom regarding the construction to preserve the validity of the claim does not apply.").

The next question is whether a person of ordinary skill in the art would have understood Robertson's "flick" gesture to comprise "gliding . . . away" as we interpret that term. Robertson says very little about the "flick" gestures themselves, other than using the word *flick*. *See, e.g.*, Ex. 1005, 39. Robertson teaches that its gestures should be "easily differentiated," and in addition to "flick" gestures, Robertson also teaches "drag and drop" operations. *Id.* at 36 ("[Y]ou can drag a document icon and drop it into a printer icon to print the document . . . ."). We credit Dr. Rosenberg's testimony that, for the XButton system to immediately distinguish between dragging and flicking, there must be some distinction between a "flick" and a "drag," and that the most plausible difference is in terms of their speed, distance, or both. *See* Ex. 2019 ¶ 90.

Although Robertson discloses that its system is capable of recognizing gestures that start on an XButton and extend outside it (*see* Ex. 1005, 43),

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a "glide" or that the distinction is arbitrary. *Cf. Braintree Labs., Inc. v. Novel Labs., Inc.*, 749 F.3d 1349, 1360 (Fed. Cir. 2014) ("Descriptive words . . . are commonly used in patent claims, to 'avoid[] a strict numerical boundary to the specified parameter.'" (alteration in original) (quoting *Pall Corp. v. Micron Separations, Inc.*, 66 F.3d 1211, 1217 (Fed. Cir. 1995)))

the only gesture for which Robertson specifically indicates this would be necessary is a "circling gesture[] for grouping, moving, and copying graphical objects" (*id.* at 39). Thus, we disagree with Google that Robertson's teaching in this regard is relevant to what Robertson means by a "flick" gesture.

We also find persuasive Neonode's dictionary definitions, spanning from 1993 to 2012, which consistently indicate that the word *flick* describes a movement that is "light," "sharp" or "quick," and "jerky" or "sudden," as opposed to definitions of "glide" referring to a movement that is "smooth," "continuous," and possibly "quiet" or "effortless." Exs. 2049, 2050, 2052, 2057.[9] And although the evidence postdates Robertson, we find relevant the supporting evidence that modern Apple and Google developers maintain a meaningful distinction between "flick" and "swipe" gestures. *See* Ex. 2022, 4; Ex. 2023, 6; Ex. 2025, 21; Ex. 2026, 5; Ex. 2029, 2; Ex. 2019 ¶¶ 80–81. We further credit Dr. Rosenberg's opinion that in the relevant time frame, a person of ordinary skill in the art would have interpreted a "flick" gesture as one in which "the pen would touch the screen, but only moves on the screen for a very short distance and is quickly lifted from the screen in a 'jerky' motion." Ex. 2019 ¶¶ 85–86.

[9] The earliest dictionary definitions (Ex. 2052) are from 1993, which is roughly contemporary with Robertson (1991), and are sufficiently close in time to be relevant. Google does not present any evidence suggesting that the meaning of *flick* had changed between 1991 and 1993. *See* PO Sur-reply 2.

Thus, we agree with Neonode that Google has not shown that Robertson's "flick" gesture comprises "gliding . . . away," and thus falls within the scope of claim 1.

Finally, we also agree with Neonode that Google has not established that Robertson's "insert" (caret) gesture comprises "gliding . . . away." Although Robertson does not provide much information about this gesture, we find Dr. Rosenberg's interpretation and annotated version of Figure 1 (Ex. 2019 ¶¶ 99–102) more credible than those of Dr. Wobbrock (Ex. 1003 ¶ 108). We credit Dr. Rosenberg's testimony that a person of ordinary skill in the art would have understood the "insert" gesture to be similar to the way a person would draw a caret to indicate an insertion within existing text. *See* Ex. 2019 ¶ 99. Thus, we agree it would involve two brief, connected movements with a sharp peak, neither of which would be a continuous gliding or swiping motion. *Id.* ¶¶ 100–102.

3. Conclusion as to Claim 1

For the above reasons, we determine that Google has not established that Robertson teaches or suggests limitation 1c, either alone or in combination with Maddalozzo. Thus, Google has not shown that claim 1 is unpatentable under § 103(a) as obvious over Robertson in view of Maddalozzo.

4. Dependent Claims 2–7, 9, 12, 13, and 15–17

As part of its first ground, Google argues that dependent claims 2–5, 13, and 15–17 are unpatentable under 35 U.S.C. § 103(a) as obvious over Robertson in view of Maddalozzo. Pet. 30–47. In its second ground, Google challenges dependent claims 6–7 and 9 as obvious over Robertson in view of

Vayda. Pet. 47–61. In its third ground, Google challenges claim 12 as obvious over Robertson in view of Bedford-Roberts. Pet. 61–64.

These claims depend from claim 1, and Google's arguments regarding those claims address the specific limitations added to claim 1 without specifically revisiting the issues we discuss above as to limitation 1c. *See* Pet. 30–64. Google does not further address the dependent claims in its Reply. *See* Pet. Reply 23.

Thus, the above considerations as to claim 1 are also applicable to the challenged dependent claims, and we determine that Google has not shown, by a preponderance of the evidence, that any of claims 2–7, 9, 12, 13, and 15–17 are unpatentable under § 103(a) as obvious over the respective prior art combinations.

D. GROUNDS BASED ON TARPENNING

In the fourth ground of the Petition, Google argues that claims 1, 4–6, 13, and 15–17 are unpatentable under 35 U.S.C. § 103(a) as obvious over Tarpenning. Pet. 65–97. For this ground, we focus on Google's challenge to sole independent claim 1 and particularly limitation 1c (Pet. 25–29), after which we address the remaining claims and the remaining grounds.

Considering the *Graham* factors, we determine for the reasons below that Google has not shown, by a preponderance of the evidence, that claim 1 is unpatentable under 35 U.S.C. § 103(a) as obvious over Tarpenning.

1. Overview of Tarpenning (Ex. 1009)

Tarpenning describes a hand-held reader device that includes a touch-sensitive display and graphical user interface, where the user accesses various software-implemented features associated with the display and

management of the content. Ex. 1009, code (57). A perspective view of the hand-held reader device is shown in Figure 2, which we reproduce below.

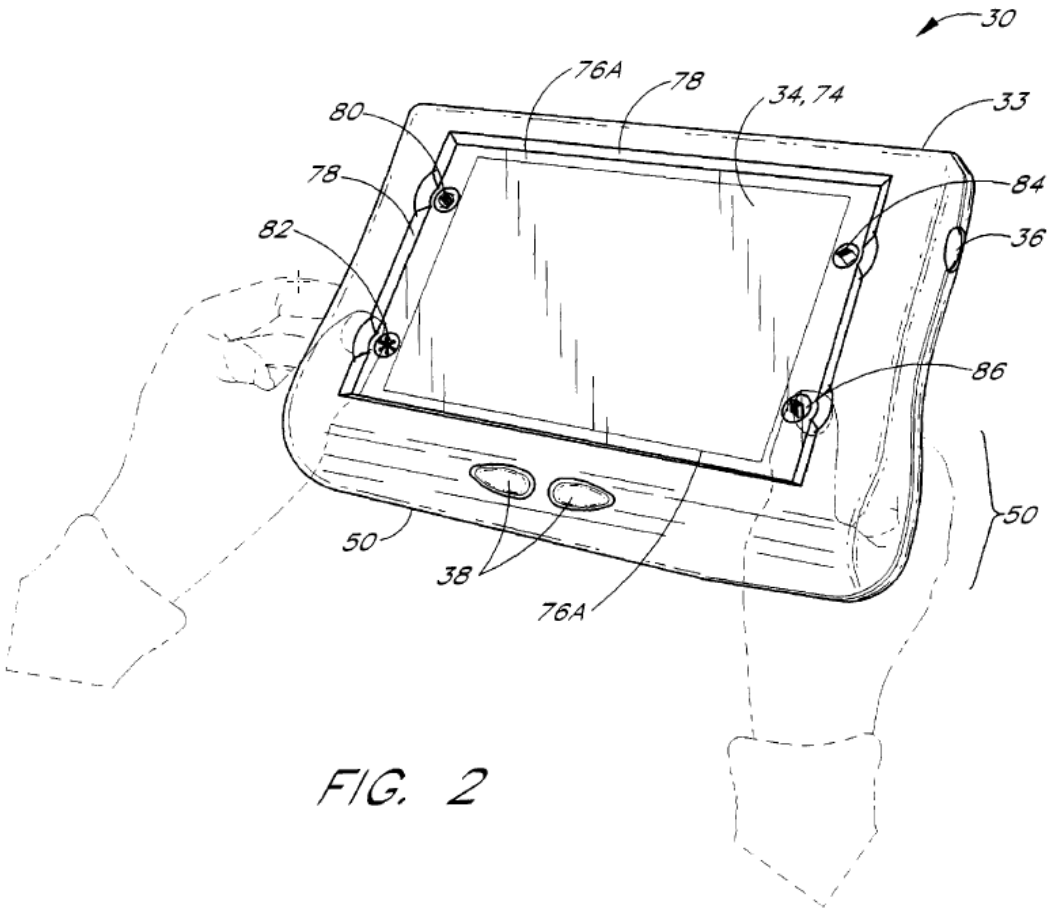

FIG. 2

Figure 2, above, illustrates a hand-held computing device adapted to be used as a portable reading device allowing a user to read literary titles and other types of content via a touch sensitive display 34. Ex. 1009, 3:42–48. The housing 33 has an increased width and depth and a rounded configuration along its base to form an extended gripping area 50 for holding the device. *Id.* at 4:10–13.

As illustrated in Figure 2, the portion of the touch screen 74 that extends beyond the perimeter 76A of the LCD display 76 has four fixed icons displayed thereon to form four respective function keys: an orientation

key 80, a user-definable "hotkey" 82, a book menu key 85, and a library menu key 86. Ex. 1009, 6:9–14. The hand-held computing device includes a user interface feature which allow a user to designate a hotkey function, as shown in Figures 6 and 7, which we reproduce below.

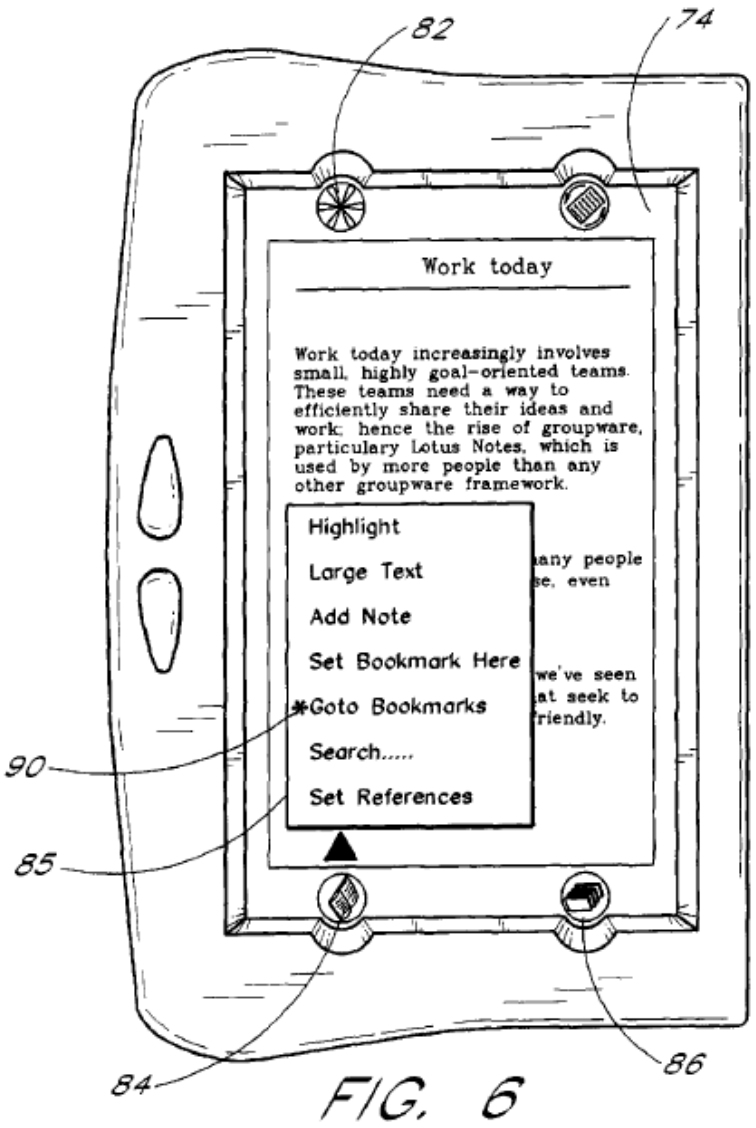

FIG. 6

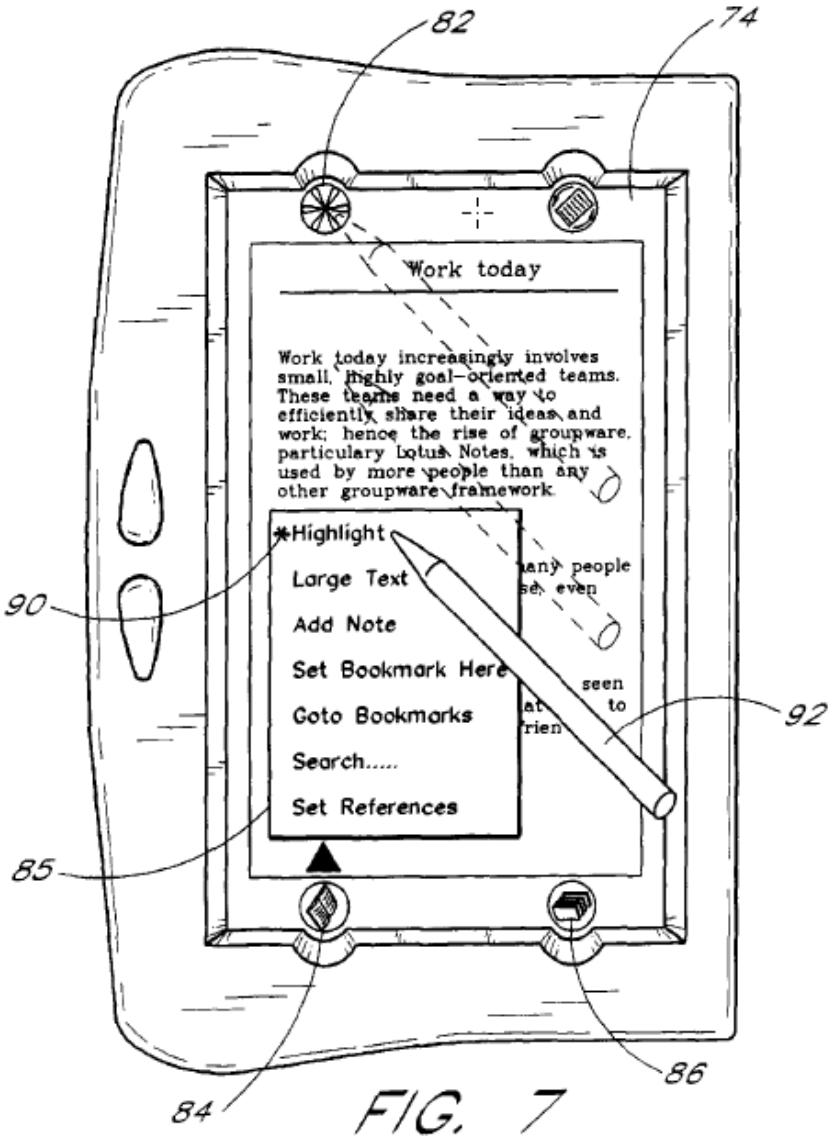

FIG. 7

Figures 6 and 7, above, illustrate an example of a hotkey assignment feature of a hand-held computing device's user interface. Ex. 1009, 3:3–4, 7:39–42. With reference to Figure 6, a user initially brings up a menu or sub-menu that contains the target hotkey function. *Id.* at 7:42–44. The menu or sub-menu item that is currently defined as the hotkey function is denoted as such by a hotkey icon 90. *Id.* at 7:30–32. In this example, the hotkey icon 90 appears next to the "Goto Bookmarks" item of the book menu. *Id.* at 7:32–34.

As depicted in Figure 7, the user then touches the hotkey 82 with the stylus 92 (or the user's finger), drags the stylus to the target item, and then removes the stylus from the touch screen 74. Ex. 1009, 7:44–48. During the dragging process, the hotkey icon 90 is displayed next to the menu item (if any) that is currently touched. *Id.* at 7:49–51. In Figure 7, the hotkey icon 90 is displayed next to the "Highlight" item since the stylus 92 is currently over that item. *Id.* at 7:51–53.

2. Limitation 1c

Limitation 1c recites, in part, "wherein the function is activated by a multi-step operation." Ex. 1001, 6:52–53. Because we find that Google has not shown that Tarpenning teaches this aspect of limitation 1c, we need only address that part of limitation 1c in our decision.

Google contends that a user may activate Tarpenning's book menu key 84 or library menu key 86 using a touch gesture. Pet. 76–77 (citing Ex. 1009, 6:9–14, 6:41–43, Figs. 2, 6; Ex. 1003 ¶¶ 214–220). Google also argues that Tarpenning separately discloses a "multi-step touch-then-glide gesture operation to active hotkey 82's 'assignment' function," in which, according to Google, the user "[i] touches the hotkey 82 with the stylus 92 (or the user's finger),' and then [ii] 'drags [glides] the stylus to the target item.'" Pet. 78 (alterations in original) (quoting Ex. 1009, 7:44–48) (citing Ex. 1009, 6:35–40, Fig. 7; Ex. 1003 ¶ 216). According to Google, "[t]he assignment is completed when the user lifts the stylus at the desired operation to be assigned." Pet. 78–79 (citing Ex. 1009, 7:44–48, Fig. 7; Ex. 1003 ¶ 216).

Google contends that a person of ordinary skill in the art "would have found it obvious to replace Tarpenning's touch operation to activate the

menu display functions of book menu key 84 and library menu 86 with the disclosed multi-step touch-then-glide activation gesture." Pet. 80 (citing Ex. 1003 ¶ 217). This is because, according to Google, a person of ordinary skill in the art would have wanted "to prevent accidental activation of the menu functions resulting from accidentally touching the icon" and to more accurately open sub-menus without lifting the stylus or the finger off the screen. *Id.* at 82 (citing Ex. 1003 ¶¶ 219–221; Ex. 1017, 10:14–16). Google contends that the ordinarily skilled artisan would have expected success because Tarpenning's mobile handheld computer already uses both touch and touch-then-glide operations to activate key functions and those operations were well known. *Id.* at 83–84.

In its Response, Neonode argues that Tarpenning's hotkey-assignment operation on hotkey 82 does not actually activate any function as recited in limitation 1c. PO Resp. 67. As Dr. Rosenberg puts it, "this assignment procedure does not 'activate' anything—it merely assigns the desired function to hotkey 82, which is then activated by the user by pressing the key, not by 'gliding . . . away.'" Ex. 2019 ¶ 139 (alteration in original). According to Dr. Rosenberg, "Tarpenning never refers to its drag-and-drop operation as 'activating' anything, but as, for example, 'defining a function' for the hotkey." *Id.* (citing Ex. 1009, 7:39–41, 8:1–3).

Google counters that the hotkey-assignment gesture "activates the *assignment* function (the system starts determining whether a new function has been assigned) *because* of the touch-then-glide gesture." Pet. Reply 19–20 (citing Ex. 1031, 45:24–47:4 (Dr. Rosenberg stating on cross-examination that the word *function* in claim 1 is broader than simply bringing up a user interface associated with an icon)). In other words, as

Google's counsel explained in oral argument, when the user touches hotkey 82 and begins moving the pointing device toward a potential function, the function "determining whether a new function has been assigned" has already been activated, and continues until the user lifts up from the device. *See* Tr. 37:17–39:16.

We find Google's argument unpersuasive.[10] Tarpenning's assignment operation for hotkey 82 is in the nature of a drag-and-drop operation, where the user drags the pen from hotkey 82 to the intended menu item to which hotkey 82 will be assigned. But Google identifies the "function [to be] activated"—not as the actual assignment of hotkey 82 to the menu item when the user lifts from the intended menu item—but as the underlying software process that looks to see whether the user has lifted yet from the selected menu item. *See* Pet. Reply 19–20; Tr. 37:17–39:16. Essentially, Google asserts that the recited *function* is part of processing the gesture itself, which we do not find persuasive. As counsel for Neonode argued at the hearing, unless the user lifts off from a menu item, no assignment to hotkey 82 has been made and nothing has actually been done. *See* Tr. 80:4–13.

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[10] We also consider this argument untimely, as it appears to contradict Google's original theory of obviousness in the Petition, which states that the "'assignment' function" is "completed when the user reaches the target item to be assigned." Pet. 79; *see also* Tr. 80:2–3 (counsel for Neonode arguing, "I submit that's not only a new point they're making, it's unsupported and . . . incorrect."); 37 CFR § 42.23(b) ("A reply may only respond to arguments raised in the corresponding . . . patent owner response[] or decision on institution.").

We also find unpersuasive Google's original argument in the Petition that the recited "function" is activated when the user reaches the target menu item being assigned to hotkey 82. *See* Pet. 79. This is essentially a traditional drag-and-drop operation. But we credit Dr. Rosenberg's testimony that when the user lifts from the intended menu item, no function has actually been activated. *See* Ex. 2019 ¶ 139. Rather, at this point a function has merely been assigned to the hotkey for future activation by touching the hotkey. *See id.*

Thus, we determine that Google has not identified any disclosure in Tarpenning in which any "function is activated by a multi-step operation" as recited in limitation 1c. Absent that teaching or suggestion, Google's argument (Pet. 80–82) does not adequately articulate why a person of ordinary skill in the art would have modified Tarpenning's book menu key 84 or library menu key 86 to achieve limitation 1c, and we find Google's obviousness argument unpersuasive as to claim 1.

3. Dependent Claims 2–7, 9, 12, 13, and 15–17

As part of its fourth ground, Google argues that dependent claims 4–6, 13, and 15–17 are unpatentable under 35 U.S.C. § 103(a) as obvious over Tarpenning. Pet. 84–97. In its fifth ground, Google challenges dependent claims 2–3, 7, and 9 as obvious over Tarpenning in view of Vayda. Pet. 98–102. In its sixth ground, Google challenges claim 12 as obvious over Tarpenning in view of Bedford-Roberts. Pet. 102–103.

These claims depend from claim 1, and Google's arguments regarding those claims address the specific limitations added to claim 1 without specifically revisiting the issues we discuss above as to limitation 1c. *See*

Pet. 84–103. Google does not further address the dependent claims in its Reply. *See* Pet. Reply 23.

Thus, the above considerations as to claim 1 are also applicable to the challenged dependent claims, and we determine that Google has not shown, by a preponderance of the evidence, that any of claims 2–7, 9, 12, 13, and 15–17 are unpatentable under § 103(a) as obvious over the respective prior art combinations.

IV. CONCLUSION

For the reasons above, Google has not shown by a preponderance of the evidence that any challenged claim of the '879 patent is unpatentable under any ground of the Petition.

V. ORDER

In consideration of the foregoing, it is

ORDERED that claims 1–7, 9, 12, 13, and 15–17 of the '879 patent have not been shown to be unpatentable; and

FURTHER ORDERED that parties to this proceeding seeking judicial review of our decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

In summary:

Claim(s)	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1–5, 13, 15–17	103(a)	Robertson, Maddalozzo		1–5, 13, 15–17
6, 7, 9	103(a)	Robertson, Maddalozzo, Vayda		6, 7, 9
12	103(a)	Robertson, Maddalozzo, Bedford-Roberts		12
1, 4–6, 13, 15–17	103(a)	Tarpenning		1, 4–6, 13, 15–17
2, 3, 7, 9	103(a)	Tarpenning, Vayda		2, 3, 7, 9
12	103(a)	Tarpenning, Bedford-Roberts		12
Overall Outcome				1–7, 9, 12, 13, 15–17

For PETITIONER:

Erika Arner
Kevin Rodkey
Yi Yu
Wei Yuan
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, LLP
erika.arner@finnegan.com
kevin.rodkey@finnegan.com
yi.yu@finnegan.com
wei.yuan@finnegan.com

For PATENT OWNER:

Parham Hendifar
Kenneth Weatherwax
Nathan Lowenstein
LOWENSTEIN & WEATHERWAX LLP
hendifar@lowensteinweatherwax.com
weatherwax@lowensteinweatherwax.com
lowenstein@lowensteinweatherwax.com

Philip Graves
GRAVES & SHAW LLP
pgraves@gravesshaw.com